

# Baseline Trash Load and Short-Term Trash Load Reduction Plan

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**Submitted by:**

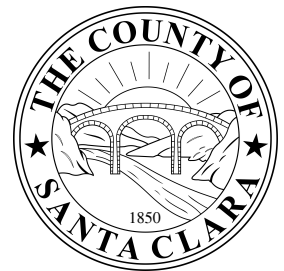
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**Department of Planning and Development**

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*In compliance with Provisions C.10.a(i) and C.10.a(ii) of Order R2-2009-0074*

*February 1, 2012*

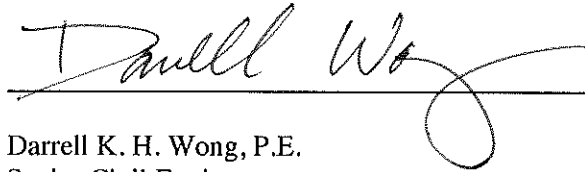
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**COUNTY OF SANTA CLARA  
SHORT-TERM TRASH LOAD REDUCTION PLAN**

**CERTIFICATION STATEMENT**

"I certify, under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted, is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

**Signature by Duly Authorized Representative:**

A handwritten signature in black ink, appearing to read "Darrell Wong", is written over a horizontal line.

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Date: January 25, 2012

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## ABBREVIATIONS

BASMAA	Bay Area Stormwater Management Agencies Association
BID	Business Improvement District
CalRecycle	California Department of Resources Recycling and Recovery
Caltrans	California Department of Transportation
CASQA	California Stormwater Quality Association
CDS	Continuous Deflection Separator
CEQA	California Environmental Quality Act
CY	Cubic Yards
EIR	Environmental Impact Report
EPA	Environmental Protection Agency
GIS	Geographic Information System
MRP	Municipal Regional Stormwater NPDES Permit
MS4	Municipal Separate Storm Sewer System
NGO	Non-Governmental Organization
NPDES	National Pollutant Discharge Elimination System
Q	Flow
SFRWQCB	San Francisco Regional Water Quality Control Board
SWRCB	State Water Resource Control Board
TMDL	Total Maximum Daily Load
USEPA	United States Environmental Protection Agency
Water Board	San Francisco Regional Water Quality Control Board
WDR	Waste Discharge Requirements

## **PREFACE**

This Baseline Trash Load and Short-Term Trash Load Reduction Plan (Plan) is submitted in compliance with provision C.10.a(i) and C.10.a(ii) of the Municipal Regional Stormwater NPDES Permit (MRP) for Phase I communities in the San Francisco Bay (Order R2-2009-0074). This Plan was developed using a regionally consistent format developed by the Bay Area Stormwater Management Agencies Association (BASMAA). Based on new information that becomes available during the implementation of this Short-Term Plan (e.g., revisions to baseline loading estimates or load reduction credits of quantification formulas), the County of Santa Clara may choose to amend or revise this Plan. If revisions or amendments are necessary, a revised Short-Term Plan will be submitted to the Water Board via the County of Santa Clara's annual reporting process.



## 1.0 INTRODUCTION

The Municipal Regional Stormwater NPDES Permit for Phase I communities in the San Francisco Bay (Order R2-2009-0074), also known as the Municipal Regional Permit (MRP), became effective on December 1, 2009. The MRP applies to 76 large, medium and small municipalities (cities, towns and counties) and flood control agencies in the San Francisco Bay Region, collectively referred to as Permittees. Provision C.10 of the MRP (Trash Load Reduction) requires Permittees to reduce trash from their Municipal Separate Storm Sewer Systems (MS4s) by 40 percent before July 1, 2014.

Required submittals to the San Francisco Bay Regional Water Quality Control Board (Water Board) by February 1, 2012 under MRP provision C.10.a (Short-Term Trash Loading Reduction Plan) include:

1. (a) Baseline trash load estimate, and (b) description of the methodology used to determine the load level.
2. A description of the Trash Load Reduction Tracking Method that will be used to account for trash load reduction actions and to demonstrate progress and attainment of trash load reduction levels.
3. A Short-Term Trash Loading Reduction Plan that describes control measures and best management practices that will be implemented to attain a 40 percent trash load reduction from its MS4 by July 1, 2014;

This Short-Term Trash Load Reduction Plan (Short-Term Plan) is submitted by the County of Santa Clara in compliance with the portions of MRP provision C.10.a.i listed as 1a and 3 above. In compliance with 1b, BASMAA submitted a progress report on behalf of Permittees that briefly describes the methodologies used to develop trash baseline loads (BASMAA 2011a). These methods are more fully described in BASMAA (2011b, 2011c). Lastly, the *Trash Load Reduction Tracking Method Technical Report* (BASMAA 2011d) was submitted by BASMAA on behalf of Permittees in compliance with submittal 2 described above. The Baseline Loading Rates and Tracking Method projects are briefly described below.

### Baseline Trash Generation Rates Project

Through approval of a BASMAA regional project, Permittees agreed to work collaboratively to develop a regionally consistent method to establish baseline trash loads from their MS4s. The project, also known as the *BASMAA Baseline Trash Generation Rates Project* assists Permittees in establishing a baseline to demonstrate progress towards MRP trash load reduction goals (i.e., 40 percent). The intent of the project was to provide a scientifically-sound method for developing (default) baseline trash generation rates that can be adjusted, based on Permittee/site specific conditions; and used to develop baseline loading rates and loads. Baseline loads form the reference point for comparing trash load reductions achieved through control measure implementation.

Baseline trash loading rates are quantified on a volume per unit area basis and based on factors that significantly affect trash generation (e.g., land use, population density, and economic profile). The method used to establish baseline trash loads for each Permittee builds off “lessons learned” from previous trash loading studies conducted in urban areas (Allison and Chiew 1995; Allison et al. 1998; Armitage et al. 1998; Armitage and Rooseboom 2000; Lippner et al. 2001; Armitage 2003; Kim et al. 2004; County of Los Angeles 2002, 2004a, 2004b; Armitage 2007). The method is based off a conceptual model developed as an outgrowth of these studies (BASMAA 2011b). Baseline trash loading rates were

developed through the quantification and characterization of trash captured in Water Board recognized full-capture treatment devices installed in the San Francisco Bay area. Methods used to develop trash baseline loading rates are more fully described in BASMAA (2011b, 2011c, and 2012).

## **Trash Load Reduction Tracking Method Summary**

The trash load reduction tracking method, described in the *Trash Load Reduction Tracking Method Technical Report*, assists Permittees in demonstrating progress towards reaching trash load reduction goals defined in the MRP (e.g., 40 percent). The tracking method is based on information gained through an extensive literature review and Permittee experiences in implementing stormwater control measures in the San Francisco Bay Area. The literature review was conducted to evaluate quantification methods used by other agencies to assess control measure effectiveness or progress towards quantitative goals. Results are documented in the *Trash Load Reduction Tracking Method: Technical Memorandum # 1 – Literature Review* (BASMAA 2011d).

Methods attributable to specific trash control measures fall into two categories: 1) trash load reduction quantification formulas; and 2) load reduction credits (BASMAA 2011e). Quantification formulas were developed for those trash control measures that were deemed feasible and practical to quantify load reductions at this time. Load reduction credits were developed for all other control measures included in the methodology development. Both categories of methods assume that as new or enhanced trash control measures are implemented by Permittees, a commensurate trash load reduction will occur. Progress towards load reduction goals will be demonstrated through comparisons to established trash baseline load estimates developed through the BASMAA *Baseline Generation Rates Project*.

## **Short-Term Trash Load Reduction Plan**

The purpose of this Short-Term Plan is to describe the current level of implementation of control measures and best management practices, and identify the type and extent to which new or enhanced control measures and best management practices will be implemented to attain a 40 percent trash load reduction from their MS4 by July 1, 2014. The Short-Term Plan was developed using a template created by BASMAA through a regional project. New and enhanced trash control measures (i.e., Best Management Practices) that Permittees may implement to demonstrate trash load reduction goals are included in Table 1.1. This list was developed collaboratively through the BASMAA Trash Committee, which included participation from Permittee, stormwater program, Water Board and non-governmental organization (NGO) staff. The list of control measures is based on: 1) the potential for Permittees to implement; 2) the availability of information required to populate formulas and develop credits; and 3) the expected benefit of implementation. Load reductions associated with each control measure are demonstrated either through a quantification formula (QF) or credits (CR) described in the *Trash Load Reduction Tracking Method Technical Report* (BASMAA 2011e).

In efforts to reduce trash discharged from MS4s, Permittees may choose to implement control measures that are not included in Table 1.1 or described more fully in BASMAA (2011e). If a Permittee chooses to do so, methods specific to calculating trash load reductions for that control measure would need to be developed. Additionally, at that point, consideration should be given to updating this Short-Term Plan.

Additionally, based on new information that becomes available during the implementation of this Short-Term Plan (e.g., revisions to baseline loading estimates or load reduction credits of quantification formulas), the County of Santa Clara may amend or revise this Plan. If revisions or amendments are

necessary, a revised Short-Term Plan will be submitted to the Water Board via the County of Santa Clara's annual reporting process.

**Table 1.1.** Trash control measures for which load reduction quantification credits or formulas were developed to track progress towards trash load reduction goals.

Load Reduction Credits
Single-use Carryout Plastic Bag Ordinances
Polystyrene Foam Food Service Ware Ordinances
Public Education and Outreach Programs
Activities to Reduce Trash from Uncovered Loads
Anti-Littering and Illegal Dumping Enforcement Activities
Improved Trash Bin/Container Management Activities
Single-Use Food and Beverage Ware Ordinances
Quantification Formulas
On-land Trash Pickup (Volunteer and/or Municipal)
Enhanced Street Sweeping
Partial-Capture Treatment Devices
Enhanced Storm Drain Inlet Maintenance
Full-Capture Treatment Devices
Creek/Channel/Shoreline Cleanups (Volunteer and/or Municipal)

This Short-Term Plan is organized into the following sections:

- Introduction;
- Trash Baseline Load Estimate;
- Load Reduction Calculation Process
- Planned Implementation of New or Enhanced Control Measures;
- Implementation Schedule; and
- References

## 2.0 BASELINE TRASH LOADING ESTIMATE

**Note:** Tables and information presented in this section are subject to change based on the results of a third monitoring event of the BASMAA Baseline Trash Generation Rates Project. Therefore, this section of the Short-Term Plan may be updated with revised trash generation rates, baseline loading rates, and baseline loads.

This section provides the estimated annual trash baseline load from the County of Santa Clara's Municipal Separate Storm Sewer System (MS4). In compliance with Provision C.10.a.ii of the MRP, the County of Santa Clara worked collaboratively with other MRP Permittees through BASMAA to develop data and the process necessary to establish baseline trash loading estimate from our MS4. The collaborative project was managed through the BASMAA Trash Committee and included a series of steps described in BASMAA (2012) and listed below. The approach was intended to be cost-effective and consistent, but still provide an adequate level of confidence in trash loads from MS4s, while acknowledging that uncertainty in trash loads still exists. The approach entailed the following steps:

1. Conduct literature review;
2. Develop conceptual model;
3. Develop and implement sampling and analysis plan;
4. Test conceptual model;
5. Develop and apply default trash **generation rates** to Permittee effective loading areas;
6. Adjust default trash generation rates based on baseline levels of control measure implementation by the Permittee to develop trash **baseline loading rates**; and,
7. Calculate Permittee-specific annual trash **baseline load**.

Through the collaborative BASMAA project, default baseline trash generation rates (volume per area) were developed for a finite set of categories, based on factors that significantly affect trash loads (e.g., land use). These trash generation rates were then applied to effective loading areas in applicable jurisdictional areas within the County of Santa Clara. Trash generation rates were then adjusted based on baseline street sweeping, storm drain inlet maintenance, and stormwater pump station maintenance conducted in each applicable area. The sum of the trash loads (i.e., rate multiplied by area) from each effective loading area represents the County of Santa Clara's baseline trash load from its MS4. A full description of the methods by which trash baseline loads were developed is included in BASMAA (2012a) and is summarized below.

### Permittee Characteristics

Founded in 1850, the County of Santa Clara has a jurisdictional area of 12,669 acres. Unincorporated Census-designated communities are scattered around the County and include Alum Rock, Burbank, Cambrian Park, East Foothill, Fruitdale, Lexington Hills, Loyola, San Martin, and Stanford. The median household income was \$74,335 in 2000<sup>1</sup>.

### Default Trash Generation Rates (Regional Approach)

A set of default trash generation rates was developed via the BASMAA regional collaborative project (BASMAA 2012a). Default generation rates were developed based on a comparison between trash

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<sup>1</sup> From the 2000 Census. The median household income for the County of Santa Clara from the 2010 Census is not currently available.

characterization monitoring results, land uses, economic profiles, and other factors that were believed to possibly affect trash generation. Three trash characterization monitoring events were scheduled via the *Trash Generation Rates Project*. Due to the compliance timeline in the MRP, only two of three trash characterization monitoring events were used to develop trash generation rates described in BASMAA (2012a) and presented in this section. Following the completion of the third characterization event (Winter 2011/12), this section of the Short-Term Plan may be updated to reflect the most up-to-date trash generation and loading rates available. Trash generation rates based on the results of two of the three characterization events are shown in Table 2-1 for each trash loading category.

**Table 2-1: Regional Default Annual Trash Generation Rates by Land Use Category.**

Land Use Category	Generation Rates (Gallons/Acre)
Retail and Wholesale	29.99
High Density Residential	17.04
K-12 Schools	13.14
Commercial and Services/ Heavy, Light and Other Industrial	7.08
Urban Parks	2.14
Low Density Residential	1.25
Rural Residential	0.17

## Jurisdictional and Effective Loading Areas

Default trash baseline generation rates presented in Table 2-1 were applied to effective loading areas with **jurisdictional areas** within the County of Santa Clara. The County of Santa Clara's jurisdictional areas includes all urban land areas within the County of Santa Clara boundaries that are subject to the requirements in the MRP. Land use areas identified by a combination of the ABAG 2005 land use dataset and Permittee knowledge that were not included within the County's jurisdictional areas include:

- Federal and State of California Facilities and Roads (e.g., Interstates, State Highways, Military Bases, Prisons);
- Roads Owned and Maintained by incorporated cities in the County;
- Colleges and Universities (Private or Public);
- Non-urban Land Uses (e.g., agriculture, forest, rangeland, open space, wetlands, water);
- Communication or Power Facilities (e.g., PG & E Substations);
- Water and Wastewater Treatment Facilities; and
- Other Transportation Facilities (e.g., airports, railroads, and maritime shipping ports).

Once the County of Santa Clara's jurisdictional area was delineated, an effective trash loading area was developed by creating a 200-foot buffer on each side of the streets within the County's jurisdictional area. The purpose of the effective loading area is to eliminate land areas not directly contributing trash to the County's MS4 (e.g., large backyards and rooftops). Both the jurisdictional and the effective loading areas for the County of Santa Clara are presented in Table 2-2.

**Table 2-2: Jurisdictional areas and effective loading areas in the County of Santa Clara by land use classes identified by ABAG (2005).**

Land Use Category	Jurisdictional Area (Acres)	Effective Loading Area (Acres)	% of Effective Loading Area
High Density Residential	1,558	1,238	22
Low Density Residential	2,858	2,147	38
Rural Residential	1,750	942	17
Commercial and Services/ Heavy, Light and Other Industrial	366	117	2
Retail and Wholesale	63	26	0
K-12 Schools	51	22	0
Urban Parks	170	39	1
County Expressways	1,150	1,150	20
<b>TOTAL</b>	<b>7,968</b>	<b>5,681</b>	<b>100%</b>

## Permittee-Specific Baseline Trash Loading Rates

Regional default trash generation rates developed through the BASMAA regional collaborative project were applied to effective loading areas within the County of Santa Clara based on identified land uses. These generation rates were then adjusted based on the calculated effectiveness of baseline street sweeping, storm drain inlet maintenance and pump station maintenance implemented by the County. These adjustments were conducted in GIS due to the site specificity of baseline generation rates and baseline control measure implementation. The following sections describe the baseline level of implementation for these three control measures. A summary of trash baseline generation and loading rates for the County of Santa Clara are provided in Table 2-3 and areas associated with these rates are illustrated in Figure 2-1.

### ***Baseline Street Sweeping***

A "baseline" street sweeping program is defined as the sweeping frequency and parking enforcement implemented by the County of Santa Clara prior to effective date of the MRP. Baseline street sweeping differs from "enhanced" street sweeping, which includes increased parking enforcement and/or sweeping conducted at a frequency greater than baseline ceiling (i.e., once per week for retail land uses and twice per month for all other land uses). The baseline ceiling was created to not penalize implementers of enhanced street sweeping programs prior to the effective date of the MRP. For those Permittees that sweep less frequent than the baseline ceiling, their current sweeping frequency serves as their baseline.

The County of Santa Clara's baseline and current street sweeping program includes sweeping expressways once per month. The County does not sweep any other streets. Parking enforcement signs

for street sweeping are not posted in the County, but parking is not permitted on expressways<sup>2</sup>. The estimated trash load reduced via baseline street sweeping is presented in Table 2-3.

### ***Baseline Storm Drain Inlet Maintenance***

Within the County of Santa Clara, storm drain inlets were cleaned at a baseline level of one time per year prior to the effective date of the MRP. Based on this baseline frequency and the effectiveness rating developed in BASMAA (2012b), the baseline storm drain maintenance program in the County of Santa Clara has an annual effectiveness rating of 5%. The estimated trash load reduced via storm drain inlet maintenance is presented in Table 2-3.

### ***Baseline Stormwater Pump Station Maintenance***

The County of Santa Clara owns and maintains seven stormwater pump stations, but none of these stations have trash racks. However, the County of Santa Clara has installed hydrodynamic separators at two of these stations. This trash load reduction is not included in the baseline calculation. However, a reduction is included in "QF-5: Full-Capture Treatment Devices" within Section 4.

Some of the trash generated in the County's effective loading area is captured by stormwater pump stations with trash racks owned and maintained by cities. For those pump stations with trash racks, the estimated volume of trash removed annually from each pump station prior to the effective date of the MRP is considered the baseline level of implementation. To determine the baseline volume of trash removed from pump stations, an effectiveness rating of 25% removal of the baseline trash load attributable to the area draining to the pump station is assumed. This effectiveness rating is based on methods developed in BASMAA (2012b). The estimated trash load reduced via baseline pump station maintenance is presented in Table 2-3.

## **Baseline Trash Loading Estimate**

The estimated baseline trash load from the County of Santa Clara was calculated as the sum of the loads from the County's effective loading area, adjusted for baseline implementation of street sweeping, storm drain inlet maintenance, and pump station maintenance. The preliminary annual trash baseline load for the County of Santa Clara is presented in Table 2-3. Preliminary baseline trash loading rates are presented in Figure 2-1a through Figure 2-1e to provide a geographical illustration of areas with estimated low, moderate, high and very high trash loading rates.

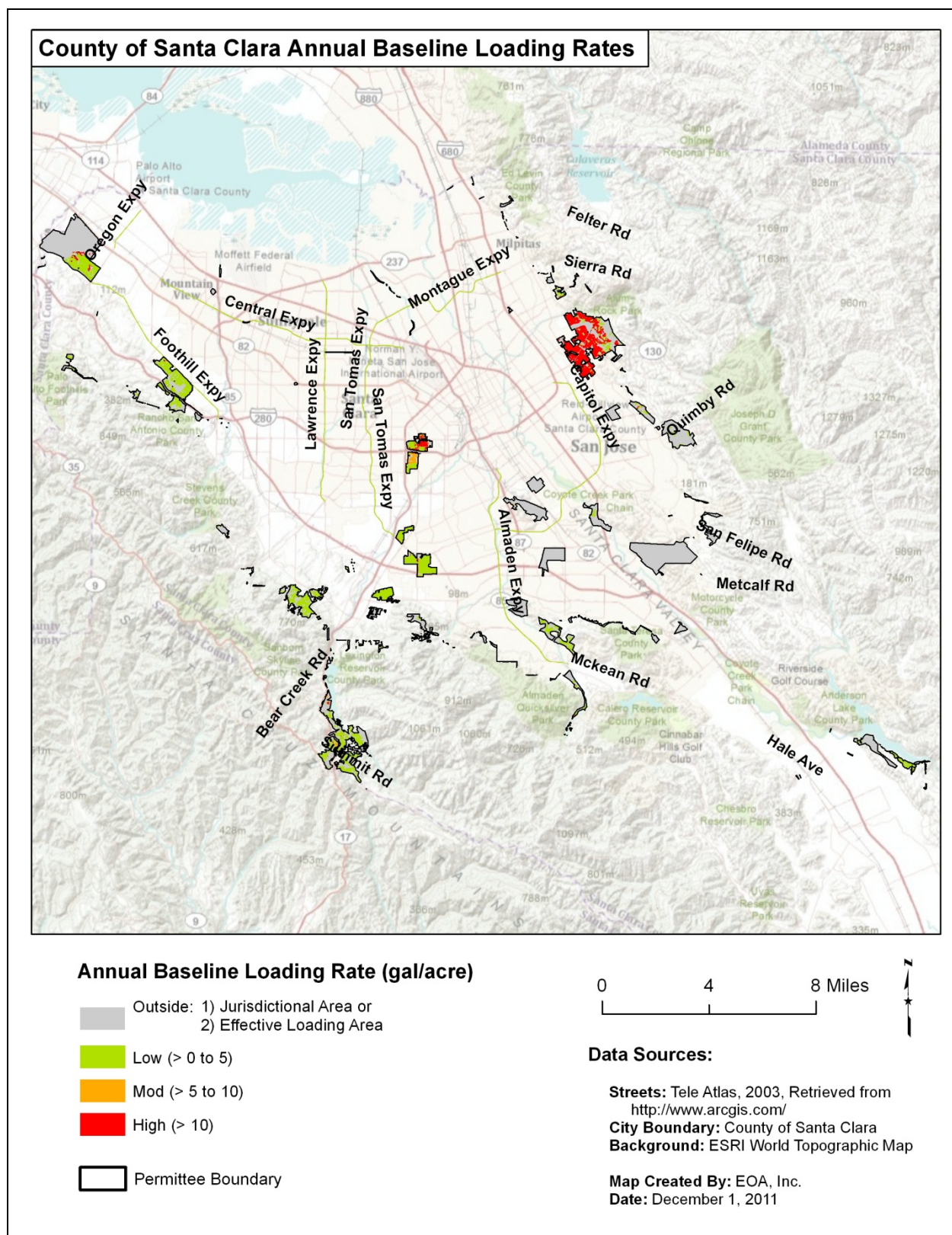
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<sup>2</sup> Considered equivalent to parking enforcement

**Table 2-3: Preliminary annual trash baseline load for the County of Santa Clara.**

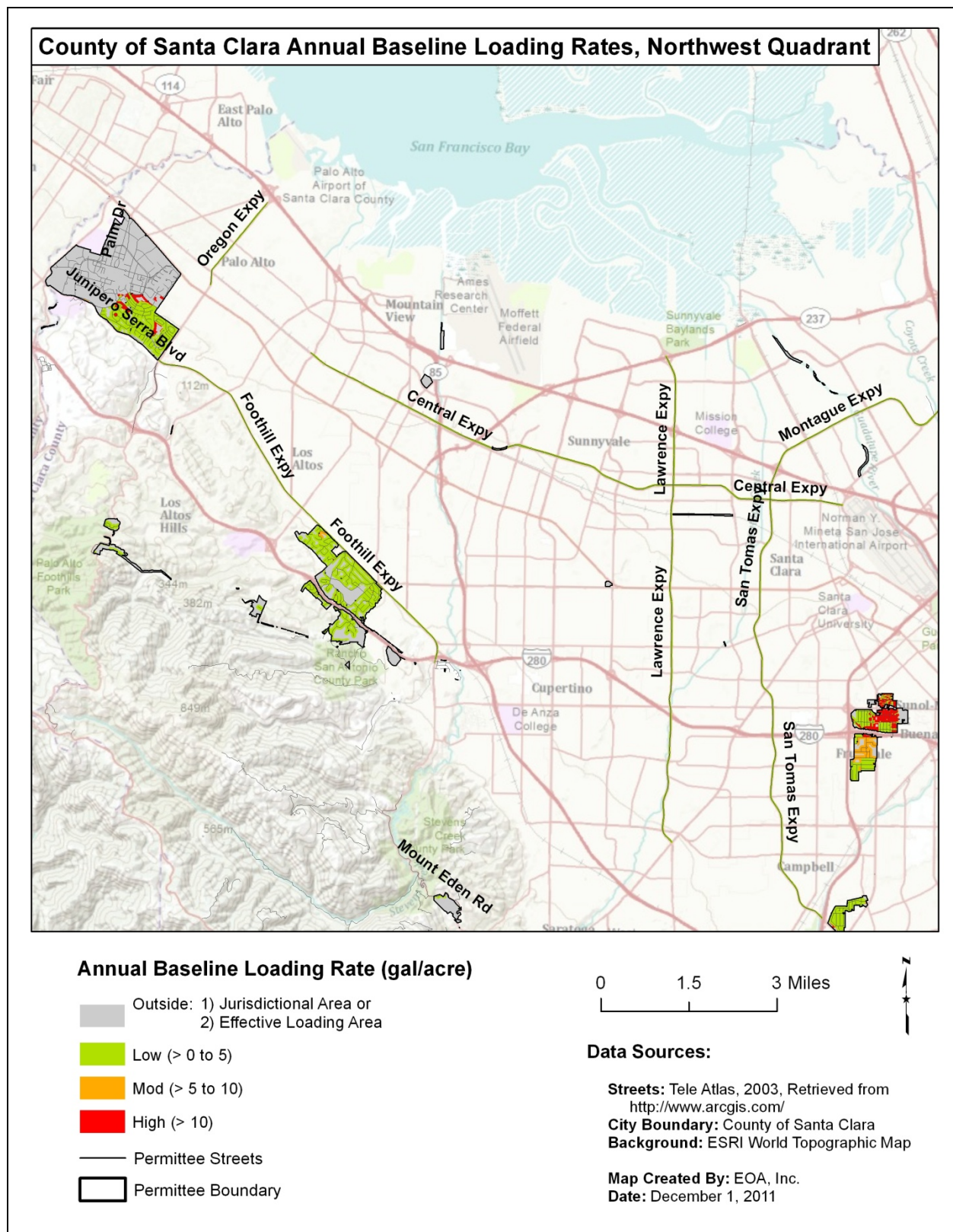
<b>Category</b>	<b>Annual Load (gallons)</b>
Preliminary Generation Trash Load	37,425
Load Removed via Baseline Street Sweeping	5,729
Load Removed via Baseline Storm Drain Inlet Maintenance	1,585
Load Removed via Baseline Stormwater Pump Station Maintenance	153
<b>Preliminary Trash Baseline Load</b>	<b>29,958</b>



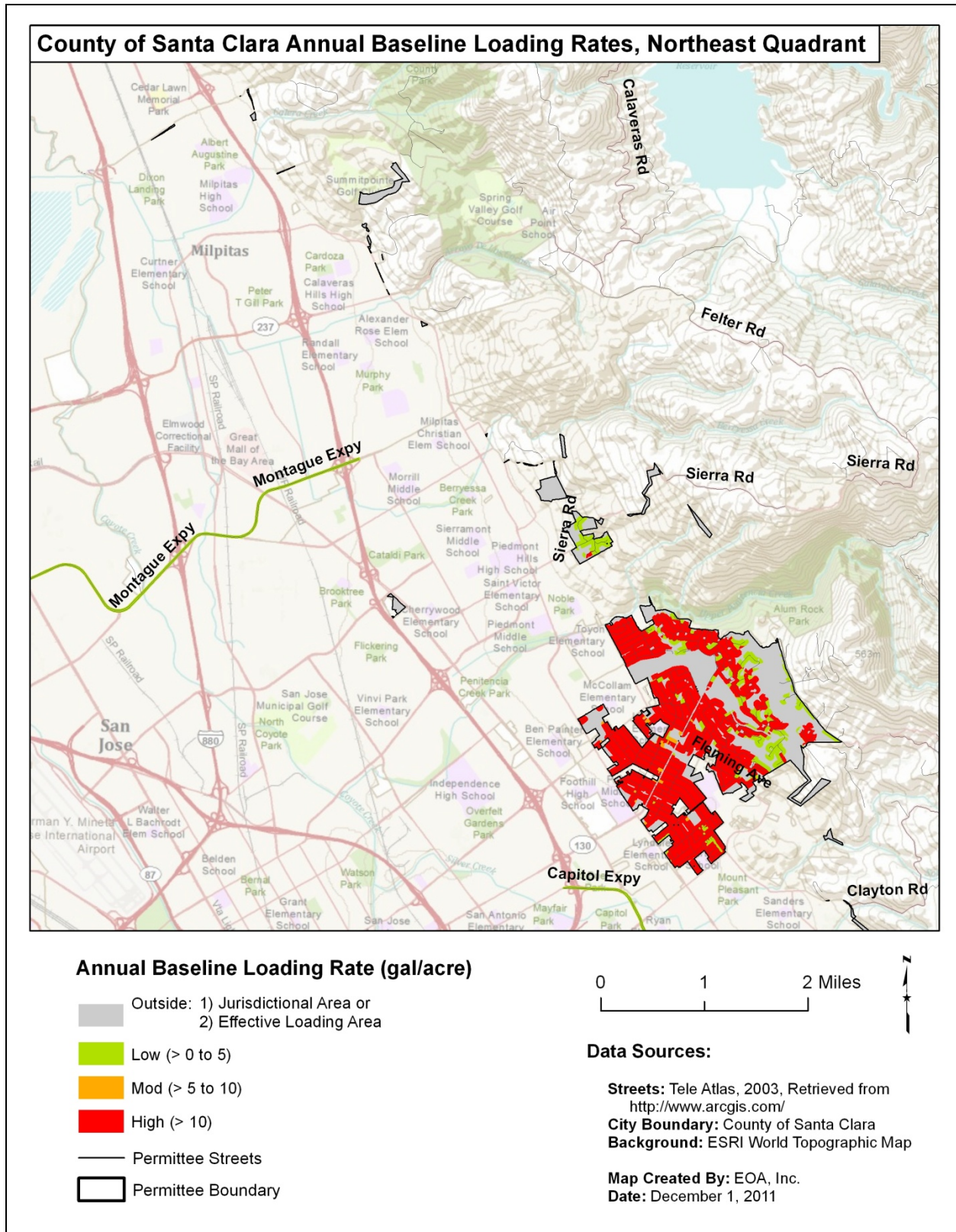


**Figure 2-1a: Estimated trash baseline loading rates for geographical areas in the County of Santa Clara.**



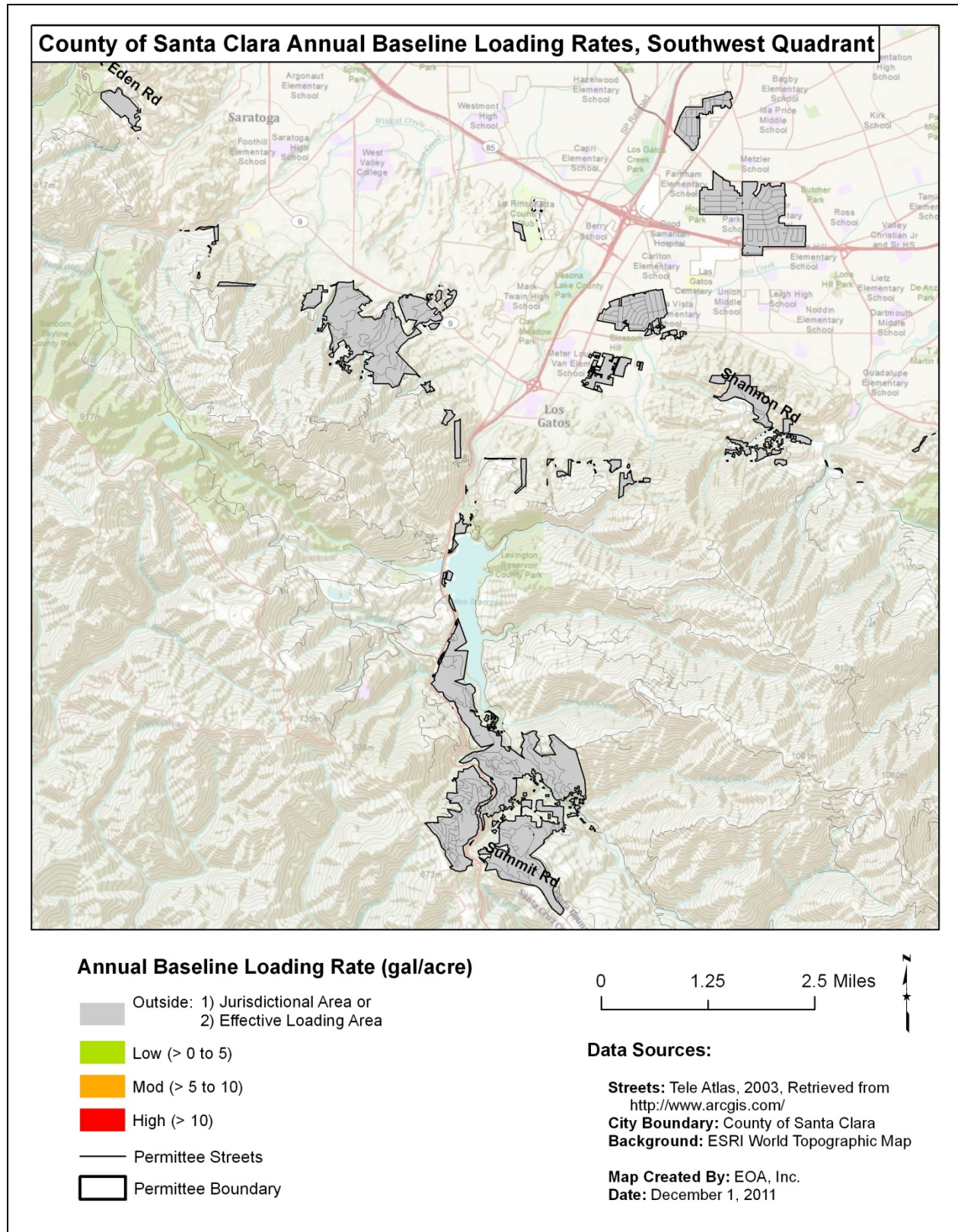


**Figure 2-1b: Estimated trash baseline loading rates for geographical areas in the County of Santa Clara's Northwest Quadrant.**



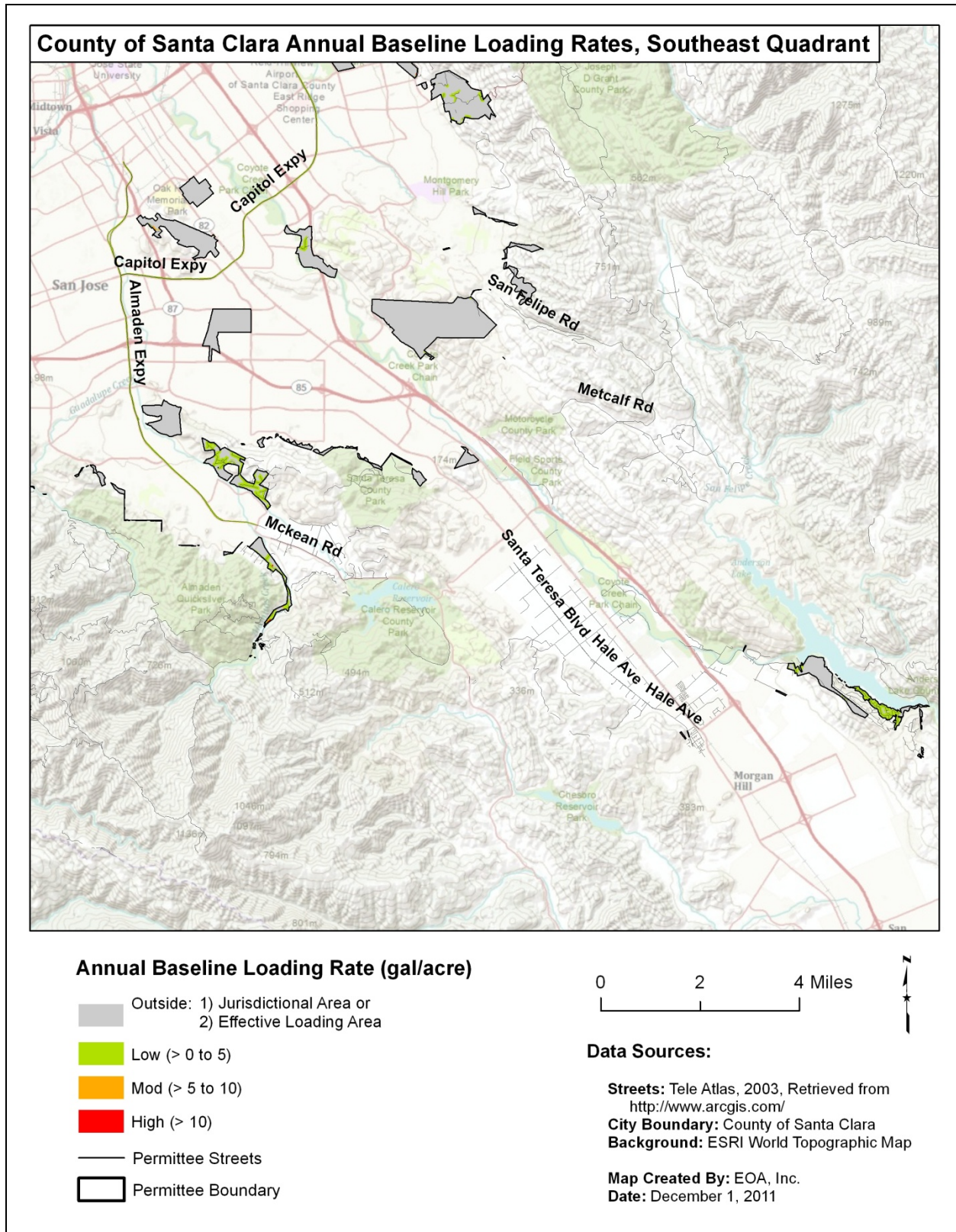
**Figure 2-1c: Estimated trash baseline loading rates for geographical areas in the County of Santa Clara's Northeast Quadrant.**





**Figure2-1d: Estimated trash baseline loading rates for geographical areas in the County of Santa Clara's Southwest Quadrant.**





**Figure2-1e: Estimated trash baseline loading rates for geographical areas in the County of Santa Clara's Southeast Quadrant.**

## 3.0 LOAD REDUCTION CALCULATION PROCESS

Using the guiding principles and assumptions described BASMAA (2011e), a stepwise process for calculating trash load reductions was developed collaboratively through BASMAA. This process is fully described in Trash Load Reduction Tracking Method Technical Report (BASMAA 2011e) and is briefly summarized in this section. The process takes into at what point in the trash generation and transport process a trash control measure: 1) prevents trash generation, 2) intercepts trash in the environment prior to reaching a water body, or 3) removes trash that has reached a water body. In doing so, it avoids double-counting of trash load reductions associated with specific control measures.

To demonstrate trash load reductions, baseline trash loading rates will be adjusted using the following process:

- Step #1: Existing Enhanced Street Sweeping
- Step #2: Trash Generation Reduction
- Step #3: On-land Interception
- Step #4: Trash Interception in the Stormwater Conveyance System
- Step #5: Trash Interception in Waterways
- Step #6: Comparison to Baseline Trash Load

Reductions calculated in Steps 2 and 5 are assumed to be implemented at a constant rate on an “area-wide” basis. For example, if a new region-wide public education strategy is implemented within the San Francisco Bay area, all Permittees can apply load reduction credits associated with this control measure. In contrast, Steps 1, 3 and 4 are “area-specific” reductions that only apply to specific areas within a Permittee’s jurisdiction. Area-specific control measures include full-capture treatment devices and enhanced street sweeping. Area-specific reductions may require the use of a Geographic Information System (GIS) to calculate.

Reductions are generally applied in the sequence described below, although some reductions may be applied “in-parallel” and calculated during the same sub-step in the process.

### Step #1: Existing Enhanced Street Sweeping

Trash load reductions due to existing enhanced street sweeping implemented prior to the effective date of the MRP and conducted at levels above baseline levels are not incorporated into each Permittee’s trash baseline load. Therefore, load reductions associated with existing enhanced are accounted for first in the trash load reduction calculation process. Existing enhanced street sweeping includes street sweeping conducted at a frequency greater than **1x/week** for streets within retail land use areas or greater than **2x/month** for streets in all other land use areas. The result of adjustments made to trash baseline loads due to the implementation of existing enhanced street sweeping is a set of **current baseline loading rates** and a **current baseline load**.

## Step #2: Trash Generation Reduction Control Measures

Trash generation reduction control measures prevent or greatly reduce the likelihood of trash from being deposited onto the urban landscape. They include the following area-wide control measures:

- CR-1: Single-Use Carryout Plastic Bag Ordinances
- CR-2: Polystyrene Foam Food Service Ware Ordinances
- CR-3: Public Education and Outreach Programs
- CR-4: Reduction of Trash from Uncovered Loads
- CR-5: Anti-Littering and Illegal Dumping Enforcement
- CR-6: Improved Trash Bin/Container Management
- CR-7: Single-Use Food and Beverage Ware Ordinances

Load reductions associated with trash generation reduction control measures are applied on an area-wide basis.<sup>5</sup> Therefore, reductions in current baseline loading rates are adjusted uniformly based on the implementation of the control measure and the associated credit claimed.

Baseline loading rate adjustments for all generation reduction controls measures implemented may be applied in-parallel, but should be applied prior to calculating on-land interception measures discussed in Step #3. The result of adjustments to trash baseline loading rates due to the implementation of these enhanced control measures will be a set of **street loading rates**. The **street load** is the volume of trash estimated to enter the environment and available for transport to the MS4 if not intercepted via on-land control measures described in Step #3.

## Step #3: On-land Interception Control Measures

Once trash enters the environment, it may be intercepted and removed through the following control measures prior to reaching the stormwater conveyance system:

- QF-1: On-land Trash Cleanups (Volunteer and/or Municipal) (Area-wide)
- QF-2: Enhanced Street Sweeping (Area-specific)

Since on-land trash cleanups can affect the amount of trash available to street sweepers, load reductions associated with their implementation will be quantified first, followed by street sweeping enhancements. On-land trash cleanups will be applied as an area-wide reduction and all effective loading rates will be adjusted equally. Enhanced street sweeping, however, is an area-specific control measure and only those effective loading rates associated with areas receiving enhancements will be adjusted. Due to the spatial nature of enhanced street sweeping, GIS may be needed to conduct this step.

The result of adjustments to effective loading rates due to the implementation of these enhanced control measures will be a set of **conveyance system loading rates**. The **conveyance load** is the volume of trash estimated to enter the stormwater conveyance system (e.g., storm drains).

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<sup>5</sup> The only exception to this statement are load reductions associated with the establishment of Business Improvement Districts (BIDs) or equivalent, which are specific to geographic areas and considered "area-specific".

## Step #4: Control Measures that Intercept Trash in the MS4

Control measures that intercept trash in the stormwater conveyance system are area-specific. Therefore, they only apply to land areas and associated trash loads reduced. Conveyance system loading rates developed as a result of Step #3 should be adjusted in-parallel for the following control measures:

- QF-3a: Partial-capture Treatment Device: Curb Inlet Screens (Area-specific)
- QF-3b: Partial-capture Treatment Device: Stormwater Pump Station Trash Racks Enhancements (Area-specific)
- QF-4: Enhanced Storm Drain Inlet Maintenance (Area-specific)
- QF-5: Full-Capture Treatment Devices (Area-specific)

Load reductions for these control measures are calculated in-parallel because they are applied to independent geographical areas. Reductions from all control measures described in this step are area-specific and may require the use of GIS to calculate a set of **waterway loading rates**. Once waterway loading rates have been determined, a **waterway load** will be developed and used as a starting point for calculating load reductions associated with trash interception in waterways discussed in Step #5.

## Step #5: Control Measures that Intercept Trash in Waterways

The load of trash that passes through the stormwater conveyance system without being intercepted may still be removed through interception in waterways. There are two control measures associated with interception in waterways:

- QF-3c: Partial-capture Treatment Device: Litter Booms/Curtains (Area-wide)
- QF-7: Creek/Channel/Shoreline Cleanups (Volunteer and/or Municipal) (Area-wide)

As these control measures are implemented, load reduction estimates can be calculated in-parallel for these two measures.

## Step #6: Comparison to Baseline Trash Load

Applying the five steps described in the processes above will provide an estimated trash load (volume) remaining after trash control measures are implemented. As depicted in the following equation, the relative percent difference between the baseline load and the load remaining after control measures are implemented is the percent reduction that will be used to assess progress towards MRP trash load reduction goals.

$$\frac{\text{Baseline Load} - \text{Remaining Load}}{\text{Baseline Load}} \cdot 100 = \% \text{ Reduction}$$



## 4.0 ENHANCED TRASH CONTROL MEASURES

This section describes the new or enhanced trash control measures planned for implementation by the County of Santa Clara. The enhanced control measures described are designed to reach a 40% reduction by July 1, 2014. New and enhanced control measures that will be implemented by County of Santa Clara include those listed in Table 4.1.

**Table 4.1. Trash control measures that will be implemented by County of Santa Clara to reach the 40% trash load reduction.**

Control Measure
Single-use Carryout Plastic Bag Ordinances
Public Education and Outreach Programs
Anti-Littering and Illegal Dumping Enforcement Activities
Improved Trash Bin/Container Management (Municipally or Privately-Controlled)
On-land Trash Pickup (Volunteer and/or Municipal)
Enhanced Street Sweeping
Full-Capture Treatment Devices
Creek/Channel/Shoreline Cleanups (Volunteer and/or Municipal)

## **CR-1: Single-use Carryout Plastic Bag Policy**

Single-use plastic carryout bags have been found to contribute substantially to the litter stream and to have adverse effects on marine wildlife (United Nations 2009, CIWMB 2007, County of Los Angeles 2007). The prevalence of litter from plastic bags in the urban environment also compromises the efficiency of systems designed to channel storm water runoff. Furthermore, plastic bag litter leads to increased clean-up costs for the Permittees and other public agencies.

Based on recent experiences of municipalities throughout the State, the process Permittees must go through to enact a single-use carryout plastic bag policy/ordinance is difficult due to intense scrutiny and opposition from not only public interest groups and lobbyists, but also merchants and community members. In most cases, most opposition groups are pressing for the development of Environmental Impact Reports (EIRs) in accordance with the California Environmental Quality Act (CEQA).

### **Baseline Level of Implementation**

Prior to adoption of the MRP, Permittees within the Bay area have enacted policies or ordinances on Single-use Carryout Plastic Bags. To avoid penalizing these early implementers, an applicable control measure implemented by a Permittee prior to the effective date of the MRP will be credited equally to a control measure implemented after the effective date. Therefore, the baseline level of implementation is not applicable for this control measure.

### **Enhanced Level of Implementation**

The County of Santa Clara has adopted a Single-Use Carryout Bag Ban, Division B11 Chapter XVII of the Santa Clara County Ordinance Code, which prohibits the distribution of single-use carry out plastic bags. The Ordinance prohibits the free distribution of paper and plastic single-use carryout bags at retail establishments within unincorporated Santa Clara County, where a retail establishment is defined as an “establishment that is open to the public and devoted to the retail sale of a commodity or commodities and provides single-use carryout bags to its customers as a result of the sale of a product. Public eating establishments are excluded from this definition.”

Exemptions to the Ordinance include: 1) Plastic or paper bags used by public eating establishments, non-prohibit organizations and social organizations; 2) Bags used to protect delivered newspaper; and 3) Notwithstanding any other law, on and after January 1, 2012 a retail establishment may provide customers participating in the California special supplemental food program for women, infants and children (WIC) and customers participating in the supplemental nutrition assistance program (SNAP formerly food stamps) with reusable bags or recycled paper bags at no cost at point of sale until December 31, 2014. In addition, single-use carryout bags without handles provided to the customer and are intended to (1) transport produce, built food or meat from a produce, bulk food or meat department within a retail establishment; (2) to hold prescription medication dispensed from a pharmacy or (3) to segregate food or merchandise that could damage or contaminate other food or merchandise when placed together in a reusable bag or recycled paper bags are exempted.

The ordinance became effective on January 1, 2012. The total percent trash reduced from MS4s as a result of implementing a single-use carryout plastic bag ban will be reported in the Annual Report submitted each September to the Water Board.

**Reduction from Implementing Control Measure**

The County of Santa Clara will receive a **twelve percent** reduction credit for implementing specific enhanced control measures described in Enhanced Level of Implementation section above. The twelve percent reduction credit will be applied to the County of Santa Clara's baseline trash load. This percent reduction credit is consistent with methods presented in the BASMAA (2011e). A summary of all load reductions anticipated through the implementation of this plan are included in Section 4.0.

## CR-3: Public Education and Outreach Programs

Permittees in the San Francisco Bay Area have implemented public education and outreach programs to inform residents about stormwater issues relating to pollutants of concern, watershed awareness and pollution prevention. Public education and outreach efforts include developing and distributing brochures and other print media; posting messages on websites and social networking media (Facebook, Twitter etc.), attending community outreach events, and conducting media advertising. In recent years, some municipal agencies have implemented anti-litter campaigns to increase public awareness about the impacts of litter on their communities and water quality; and to encourage the public to stop littering.

### Baseline Level of Implementation

The County of Santa Clara implemented the following public education and outreach control measures prior to the effective date of the MRP. There are no baseline actions because there are no additional actions that are will not be continued during the term of the MRP. New actions or actions started prior to the effective date of the MRP and continued into the future are described under the next section.

### Enhanced Level of Implementation

The County of Santa Clara will implement the following public education and outreach control measures prior to July 1, 2011.

#### Litter Reduction Advertising Campaign(s)

##### ***BASMAA Youth Outreach Campaign (Regional)***

Through participation and funding of the regional BASMAA Youth Outreach Campaign the County of Santa, will implement an outreach campaign designed to reduce littering from the target audience in the Bay Area. The Youth Outreach Campaign was launched in September 2011 (post-MRP effective date) and aims to increase the awareness of Bay Area Youth (ages 16-24) on litter and stormwater pollution issues, and eventually change their littering behaviors. Combining the ideas of Community Based Social Marketing with traditional advertising, the Youth Campaign aims to engage youth to enable the peer-to-peer distribution of Campaign messages. The Campaign will at least run from FY 11-12 through FY 13-14. A brief description of the Campaign activities is provided below:

- Raising Awareness: The Campaign will begin by raising awareness of the target audience on litter and stormwater pollution issues. Partnerships with youth commissions, high schools, and other youth focused organizations will be developed to reach the target audience. Messages targeted to youth will be created and distributed via paid advertising, email marketing, Campaign website and social networking sites (e.g., Facebook and twitter).
- Engage the Youth - The advertisements will encourage the audience to participate in the Youth Campaign by joining a Facebook page, entering a contest, taking an online quiz, etc., and providing their contact information. At the beginning of FY 12-13, a video contest will be launched to get Bay Area youth further involved in the Campaign. An online voting system will be used to select the winning entry. Media advertising will be conducted to promote the winning entry.

- Change Behaviors: To move the audience along the behavior change continuum, the Campaign will use electronic platforms such as email marketing and social networking sites to encourage participants to engage in increasingly more difficult behavior changes, such as participating in a clean-up, organizing a clean-up, etc.
- Maintain Engagement: The Campaign will continue to interact with the target audience through email marketing and social media websites.

The Youth Campaign will include a pre and post campaign survey to evaluate the effectiveness of outreach. The pre-campaign survey will be conducted in FY 11-12 and the post campaign survey in FY 13-14. Other evaluation mechanisms, such as website hits, number of youth engaged in the Campaign's social networking website, etc. will also be used to evaluate its effectiveness in increasing awareness and changing behavior.

### ***Watershed Watch Campaign (Countywide)***

In addition to the BASMAA Campaign, the County of Santa Clara will continue to implement the countywide **Watershed Watch Campaign** through active participation and funding of the Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP). This Campaign conducts media advertising that includes anti-litter messages. Anti-litter advertisements for television, print, transit and radio have been developed and are used each year and will continue in the future. A telephone survey is conducted every five years to measure the effectiveness of outreach and increase in awareness about litter and stormwater related messaging.

### **Outreach to School-age Children or Youth**

#### ***ZunZun (Countywide)***

Through participation and funding of the SCVURPPP countywide ZunZun Program the County of Santa Clara, plans to continue to implement litter reduction outreach to elementary school-age children. Up to 50 ZunZun assemblies at elementary schools are conducted in the Santa Clara Valley each year. These bilingual musical assemblies educate elementary school students and their teachers on watersheds and urban runoff pollution prevention, including litter. ZunZun performances use physical comedy, audience participation and musical instruments to educate teachers and children. Handouts, including teacher and student activity sheets, are distributed following the assembly.

The SCVURPPP Schools and Youth Education and Outreach Work Group provides a list of schools for ZunZun to contact. In addition to schools with high Hispanic populations, the list includes schools with high Asian/Pacific Islander populations.

ZunZun assemblies are evaluated using postage-paid evaluation cards that are distributed to all teachers present at the performances. Teachers mail the completed evaluation cards to SCVURPPP, and results are compiled by SCVURPPP staff. Based on the teacher feedback, changes are made to future assemblies and/or handouts.

### **Media Relations**

#### ***BASMAA Regional Media Relations Project (Regional)***

Through participation and funding of the **BASMAA Regional Media Relations Project**, the County of Santa Clara plans to continue to implement a media relations project partially

designed to reduce littering from target audiences in the Bay Area. The goal of the BASMAA Media Relations Project is to generate media coverage that encourages individuals to adopt behavior changes to prevent water pollution, including littering. At least two press releases or PSAs focus on litter issues each year (e.g., creek clean-up activities, preventing litter by using reusable containers, etc.).

### **Percent Reduction from Enhancements**

The County of Santa Clara will receive a **six percent** reduction credit for implementing specific enhanced control measures described in Enhanced Level of Implementation section above. The six percent reduction credit will be applied to the County of Santa Clara's baseline trash load. This percent reduction credit is consistent with methods presented in the BASMAA (2011e). A summary of all load reductions anticipated through the implementation of this plan are included in Section 4.0.

## **CR-5: Anti-Littering and Illegal Dumping Enforcement Activities**

Successful anti-littering and illegal dumping enforcement activities include laws or ordinances that make littering or dumping of trash illegal. Laws are enforced by various municipal agency staff (e.g., police, sheriff and public works department staff) who issue citations in response to citizen complaints or other enforcement methods (e.g., surveillance cameras, signage and/or physical barriers installed at illegal dumping hot spots). In some California jurisdictions, the minimum fine for littering is \$500 and the maximum penalty for highway littering is \$1000 (City of San Francisco 2001). However, it is difficult to enforce small littering events unless they are witnessed or solid proof exists linking the offender to the litter. As a result, enforcement tends to focus on larger scale illegal dumping activities.

### **Baseline Level of Implementation**

The baseline trash load described in Section 2.0, assumes that the County of Santa Clara has adopted a basic anti-littering and illegal dumping enforcement program that entails receiving and responding to complaints from citizens as resources allow. The County has an existing Solid Waste Program and plans on continuing with the program which already includes the enhanced efforts.

### **Enhanced Level of Implementation**

The County of Santa Clara has been implementing a Solid Waste Program since 1989 and has regulatory authority under Division B11 Chapter IX: Garbage and Refuse of the Santa Clara County Ordinance Code. The Solid Waste Program serves the unincorporated areas of the County and all cities except the City of San Jose and consists of the following activities: permitting solid waste disposal, composting and transfer facilities; inspecting landfills, transfer stations, composting facilities, and refuse collection vehicles and yards; monitoring disposal facilities to exclude hazardous wastes, medical wastes or liquid wastes; providing information to the public and industry regarding the proper disposal of solid wastes (including asbestos); and investigating complaints and mitigating problems associated with illegal dumping, disposal, or storage of solid wastes.

The Solid Waste Program investigates all complaints on illegal dumping in unincorporated Santa Clara County. During investigation/clean up staff collect evidence to identify the offender and when possible take appropriate enforcement actions. Enforcement actions include citations, informal and formal office hearings, and, as a last resort, referral to County Counsel or the District Attorney. The Solid Waste Program is also in the process of developing a fine schedule under County Ordinance Code Division A-37 Administrative Fines/ Penalties, which will make the fine process more efficient. The Solid Waste Program expects the fine schedule to be developed by July 2012.

The Department of Parks and Recreation (Parks) oversees littering and dumping problems within County Parks. Division B.14 Chapter 2 Article 2 of the Santa Clara County Ordinance Code addresses dumping, littering and cleanliness of the County Parks.

Parks is made aware of illegal dumpsites from public complaints and when staff finds a site while performing his/her rounds through a County park. Parks investigates all complaint on illegal dumping collects evidence to identify the offender and when possible takes appropriate enforcement actions.

### **Percent Reduction from Enhancements**

The County of Santa Clara will receive a **two percent** reduction credit for implementing specific enhanced control measures described in *Description of Enhanced Level of Implementation* section above. The two percent reduction credit will be applied to the baseline trash load to urban creeks from the municipal separate storm sewer system (MS4) owned and operated by the County of Santa Clara. This percent reduction credit was obtained from the *Trash Load Reduction Tracking Method Report* (BASMAA 2011e) and is presented in the Trash Load Reduction Summary Table included in Section 4.



## CR-6: Improved Trash Bin/Container Management

Receptacles used to place/store trash or recyclables prior to collection by a public agency or private waste hauler reduce the potential for littering and trash loading to stormwater conveyance systems and receiving waters (City of Los Angeles 2004). For the purposes of assigning trash load reduction credits, receptacles fall into the following two categories:

- **Private Trash/Recycling Bins:** A receptacle for placing trash or recyclables generated from a household, business, or other location that is serviced by a trash hauler. Bins are specifically-designed, heavy-duty plastic wheeled containers with hinged lids; or large multi-yard metal or plastic containers rectangular in shape.
- **Public Area Trash Containers:** A receptacle for placing incidental trash generated in public spaces that provides people with a convenient and appropriate place to dispose of trash. The design and size of public area trash containers vary widely, depending on their setting and use.

The effectiveness of bins/containers and bins in reducing trash in the environment is likely dependent upon: the location and density of the receptacles, size of the bin/container in relationship to the size needed to service users, frequency of maintenance, and the ability of the bin/container to capture and contain the trash deposited.

### Baseline Level of Implementation

The baseline trash load described in Section 2.0, assumes that the County of Santa Clara has not implemented enhanced trash bin/container management practices prior to effective date of the MRP. The County has an existing Solid Waste Program and plans on continuing with the program, which already includes the enhanced efforts.

### Enhanced Level of Implementation

The County has implemented a Solid Waste Program and a Garbage and Refuse Ordinance (Division B.11 Chapter IX) that gives the Solid Waste Program the authority to enforce against insufficient containers and garbage collection service issues.

Section 189 of the Ordinance contains refuse container requirements, which requires containers to be adequately sized for receiving and holding all refuse and must be constructed so as to be durable, leak proof, cleanable and have close-fitting lids. This section also prohibits refuse producers from filling a refuse container that causes the refuse to fall out of or overflow from the container, or to preclude proper closure of the lid.

Section 184 of the Ordinance requires a garbage producer to have and pay for garbage collection services. The Ordinance exempts garbage producers that live in remote areas where a permitted collector cannot provide services. In these cases the garbage producer is allowed to transport his/her own garbage to an approved solid waste facility with a frequency and mode of transport to preclude any nuisance conditions.

The Solid Waste Program investigates any complaints about refuse containers and coordinates with the permitted garbage collector to address garbage producers that have insufficient trash collection.

### **Percent Reduction from Enhancements**

The County of Santa Clara will receive a **three percent** reduction credit for implementing specific enhanced control measures described in Description of Enhanced Level of Implementation section above. The three percent reduction credit will be applied to the baseline trash load to urban creeks from the municipal separate storm sewer system (MS4) owned and operated by the County of Santa Clara. This percent reduction credit was obtained from the Trash Load Reduction Tracking Method Report (BASMAA 2011e) and is presented in the Trash Load Reduction Summary Table included in Section 4.

## QF-1: Enhanced On-Land Trash Cleanups (Volunteers and/or Municipal)

On-land cleanups conducted by Permittees and volunteers have been successful in removing trash from identified trash hot spots and engaging local citizenry in improving their communities. Permittees have several programs in place to address on-land trash. Municipal efforts relate to ongoing beautification of impacted areas and coordination of cleanup events. Volunteer on-land cleanups involve the meeting of individuals, creek and watershed groups, civic organizations, businesses and others at designated or adopted on-land sites to remove trash. On-land trash cleanups are conducted as single-day or throughout the year.

### Baseline Level of Implementation

The County of Santa Clara implemented the following on-land cleanup activities prior to the effective date of the MRP. The Department of Parks and Recreation (Parks) and Department of Environmental Health (DEH) cleaned up homeless encampments and illegal dump sites. Parks only performs clean ups for sites that are located in County Parks while DEH performs cleanups on both public and private land. In addition, Parks and Recreation organizes land-based clean up throughout the year at various County Park locations. These control measures are considered baseline because they were accounted for in the preliminary trash generation rates established through the BASMAA *Baseline Trash Loading Rates Project*. New or enhanced actions that began or are planned to begin after the effective date of the MRP are described under the next section.

### Enhanced Level of Implementation

Prior to July 1, 2014, the County of Santa Clara will be conducting or coordinating the following new or enhanced on-land trash cleanup activities listed below. These on-land cleanups will be conducted or coordinated each year and the volume of trash removed will be tracked to demonstrate trash loads reduced.

Please note that only trash that has the potential of entering the MS4 will be tracked. As a result, large items (e.g., appliances, shopping carts, furniture, mattresses, televisions, tires, lumber, etc.) that will be removed during on-land trash cleanups are not part of the volume determination since they do not have the potential of entering the MS4.

#### ***New or Enhanced Permittee-led On-land Cleanups:***

- *Routine or Regularly Scheduled Litter Pickup and Removal*
- *Removal of Homeless Encampments*
- *Illegal Dump Site Response and Abatement*
- *Organized Single-day Cleanup Events*
- *Expressway clean-ups*

### Percent Reduction from Enhancements

The total estimated annual volume of trash that will be reduced beginning July 1, 2014 as a result of implementing on-land trash cleanups is 199 gallons. This volume is equal to

approximately a **0.7 percent** reduction in the baseline trash load to urban creeks from the municipal separate storm sewer system (MS4) owned and operated by the County of Santa Clara. Both values provided within this section are included in Trash Load Reduction Summary Table included in Section 4.

## QF-2: Enhanced Street Sweeping

Street sweeping is conducted by most, if not all, Bay Area municipalities to remove trash and debris that collect in the gutters at the edge of streets. Parked cars and large storms that produce significant runoff can impact the effectiveness of street sweepers. However, increasing parking enforcement or more frequent street sweeping (as compared to the frequency of storm events) may increase the trash load reduced to MS4s. Permittees who choose to enhance street sweeping may do so to demonstrate trash load reductions to their MS4s and progress towards trash load reduction goals required by the MRP.

### Baseline Level of Implementation

The baseline trash load described in Section 2.0 incorporates the trash load reductions due to baseline street sweeping. The County of Santa Clara's baseline street sweeping program includes sweeping the outside curb on County Expressways at a frequency of once per month on average. Parking enforcement signs are not posted but parking is not permitted on expressway per the California Street and Highways Code.

### Enhanced Level of Implementation

Enhancements to street sweeping frequencies and parking enforcement (or equivalent measures) control measures will be used to calculate loads reduced from enhanced street sweeping, consistent with the trash load reduction tracking method (BASMAA 2011e). A list of planned enhancements is included in Table QF-2-1. Enhancements include: increasing sweeping on County Expressway to once per week and will include sweeping the median curb.

### Percent Reduction from Enhancements

The total estimated annual volume of trash that will be reduced by July 1, 2014 as a result of enhanced street sweeping is 6,575 gallons. As described in Trash Load Reduction Summary Table included in Section 4, this volume is equal to approximately a **21.9 percent** reduction in the baseline trash load to urban creeks from the municipal separate storm sewer system (MS4) owned and operated by the County of Santa Clara.

**Table QF-2-1. Planned enhanced street sweeping program in the *County of Santa Clara*.**

Route ID	Approximate Length Swept (curb miles)	Baseline		Enhanced	
		Frequency	Parking Enforcement	Frequency	Parking Enforcement
County-owned Expressways (outside curb)	140	Monthly	Yes	Weekly	Yes
County-owned Expressways (median)	140	None	Yes	Weekly	Yes

## QF-5: Full-Capture Treatment Devices

As defined by the Municipal Regional Stormwater Permit (MRP), a full-capture system or device is any single device or series of devices that traps all particles retained by a 5 mm mesh screen and has a design treatment capacity of not less than the peak flow rate (Q) resulting from a one-year, one-hour, storm in the sub-drainage area. A list of the full-capture systems and devices recognized by the San Francisco Bay Regional Water Quality Control Board (Water Board) is included in *Trash Load Reduction Tracking Method Report* (BASMAA 2011e). Trash loads reduced via publically or privately owned and operated devices within a Permittee's jurisdictional area that have been recognized by the Water Board as full-capture may be used to demonstrate attainment of trash load reduction goals.

### Baseline Level of Implementation

Prior to adoption of the MRP, some Permittees installed and maintained full capture devices. To avoid penalizing these early implementers, an applicable control measure implemented within a Permittee's jurisdictional area prior to the effective date of the MRP will be credited equally to a control measure implemented after the effective date. Therefore, the baseline level of implementation is no trash full-capture devices have been installed.

### Enhanced Level of Implementation

A total of four trash full-capture treatment devices have been or will be installed in the County of Santa Clara prior to July 1, 2014. A list of these full-capture devices is included in Table QF-5-1. All devices listed within this table are enhanced trash control measures. Table QF-5-1 also includes the area treated and the calculated trash load reduced from each full-capture treatment device. These calculations are consistent with the approach described in the *Trash Load Reduction Tracking Method Report* (BASMAA 2011e).

### Percent Reduction from Enhancements

The total estimated annual volume of trash that will be reduced by July 1, 2014 as a result of implementing full capture devices is 154 gallons. This volume is equal to approximately a **0.5 percent** reduction in the baseline trash load to urban creeks from the municipal separate storm sewer system (MS4) owned and operated by the County of Santa Clara. Both values provided within this section are included in Trash Load Reduction Summary Table included in Section 4.

**Table QF-5-1. Trash full-capture treatment devices within the jurisdictional boundaries of the County of Santa Clara that are planned for installation by July 1, 2014.**

Device ID	Public or Private	Device Name	Location (Cross Streets)	Installation Date/Anticipated Installation Date	Total Area Treated (acres)	Trash Load Reduced
Central/ Fair oaks	Public	CDS	Central Expwy and Fair Oaks, Sunnyvale	2005	60.88	116
Central/ De La Cruz	Public	CDS	Central Expwy and De La Cruz Blvd, Santa Clara	2005	11.44	21
Porter Lane	Private	CDS	Porter Court ( in lot 7)	July 2013	4	13
Camden Ave	Private	CDS	1450 Camden Avenue	April 24, 2009	0.56	3



## QF-6: Creek/Channel/Shoreline Cleanups

Creek/channel/shoreline cleanups have been successful in removing large amounts of trash from San Francisco Bay area creeks and waterways; and increasing citizen's awareness of trash issues within their communities. Creek/channel/shoreline cleanups are conducted as single-day events or throughout the year by volunteers and municipal agencies. Since volunteers and municipal agencies have the common goal of clean creeks and waterways, their efforts sometimes overlap. This is apparent with some municipal agencies using volunteers to help assess and clean designated trash hot spots during single-day volunteer events.

### Baseline Level of Implementation

Trash reduced via creek/channel/shoreline cleanups was not accounted for in the County of Santa Clara's baseline trash load described in Section 2.0. Therefore, implementation of any of the control measures described in this section is considered to be an enhancement and can be used to demonstrate progress towards load reduction goals.

### Enhanced Level of Implementation

Prior to July 1, 2014, the County of Santa Clara will conduct MRP-required<sup>10</sup> and the following non MRP-required creek/channel/shoreline cleanups<sup>11</sup> listed below. Both types of cleanups will be conducted each year and the volume of trash removed will be tracked to demonstrate trash loads reduced.

#### **Permittee & Volunteer Collaborative Activities**

##### ***Single-day Efforts***

- National River Cleanup Day (third Saturday in May)
  - Stevens Creek Reservoir
  - Hellyer Park/ Coyote Creek
  - Los Gatos Creek, Campbell/los Gatos
  - Lexington Reservoir, Los Gatos
  - Vasona Reservoir, Los Gatos
- Coastal Cleanup Day (third Saturday in September)
  - Stevens Creek Reservoir
  - Almaden Quicksilver/los Alamitos creek
  - Hellyer Park/ Coyote Creek
  - Los Gatos Creek, Campbell/ Los Gatos
  - Lexington Reservoir, Los Gatos
- Other Organized Single-day Events

#### **Permittee-led Cleanup Activities**

##### ***On-going Efforts***

- *Removal of Homeless Encampments*
- *Illegal Dump Site Correction*

<sup>10</sup> Creek/channel/shoreline cleanups conducted in accordance with Permit Provision C.10.b.

<sup>6</sup> All "other" creek/channel/shoreline cleanups conducted by a municipality that are not required by Provision C.10.b.

The Department of Parks and Recreation (Parks) responds to complaints of illegal dumpsites and homeless encampments as well as those that the Parks staff discovers during their rounds through County Parks. Parks staff investigates complaints and takes appropriate measures to cleanup the dumpsite and/or homeless encampment. However, not all illegal dumpsites, homeless encampments and single-day cleanup sites are tracked by volume. Only those that are tracked by volume will be counted toward the 40% reduction goal.

Parks participates and help host National River Cleanup Day and Coastal Cleanup Day each year at multiple locations throughout County parks. Trash hot spots identified by the County to satisfy Provision C.10 .b are assessed and cleaned during National River Cleanup Day and/or Coastal Cleanup Day.

The Department of Environmental Health (DEH) also responds to complaints of illegal dumpsites and homeless encampments throughout unincorporated Santa Clara County on public and/or private land. However, DEH does not track trash removed by volume and will not be counted toward the 40% reduction until DEH is capable of tracking this information.

### **Percent Reduction from Enhancements**

The total estimated annual volume of trash that will be reduced by July 1, 2014 as a result of implementing creek/channel/shoreline cleanups is 199 gallons. This volume is equal to approximately a **0.7 percent** reduction in the baseline trash load to urban creeks from the municipal separate storm sewer system (MS4) owned and operated by the County of Santa Clara. Both values provided within this section are included in Trash Load Reduction Summary Table included in Section 4.

## **5.0 SUMMARY OF TRASH CONTROL MEASURE ENHANCEMENTS**

The County of Santa Clara is committed to reducing the potential for trash impacts in local water bodies in the San Francisco Bay Area. The planned enhanced trash control measures described in Section 3.0 are also listed in Table 4-1. The enhancements are intended to comply with the 40% trash load reduction goal in MRP provision C.10.

The County of Santa Clara has indicated in this plan the trash control measures the Departments of Parks and Recreation, Roads and Airports, Environmental Health and Integrated Waste Management plan or have already implement to reduce the trash load to local water bodies in the San Francisco Bay Watershed. These departments plan to continue implementing a Single-Use Carry-out Bag Ban; Solid Waste Program, which will include investigating illegal dumping, collecting evidence, taking enforcement actions, working with the garbage collection agencies to identify households/businesses with insufficient trash collection, and clean up illegal dump sites; clean-up homeless encampments; organize single-day cleanup events; inspect private and public full-capture treatment device to ensure the device is operating correctly; and continue to maintain county-owned storm drain systems and pump stations. The County of Santa Clara also plans to increase street sweeping of expressways from monthly to weekly. In addition, through participation and funding of the SCVURPPP and BASMAA the County of Santa will implement an outreach campaign program, outreach to school age children and media relations.

**Table 5-1. Planned enhanced trash control measure implementation within the jurisdictional boundaries of the *County of Santa Clara* and associated trash loads reduced.**

Trash Control Measure	Summary Description of Control Measure	% Reduction (Credits)	Trash Load Reduced (Gallons)	Cumulative % Reduction (Compared to Baseline)
Single-use Carryout Plastic Bag Ordinance (CR-1)	Single-use Bag Ban effective 1/1/12	12	3,595	12%
Public Education and Outreach Programs (CR-3)	Participate in SCVURPPP/BASMAA	6	1,797	18%
Anti-Littering and Illegal Dumping Enforcement Activities (CR-5)	Program that includes investigation, collection of evidence and enforcement when possible	2	599	20%
Improved Trash Bin/Container Management (Municipally or Privately-Controlled) (CR-6)	Ordinance and work with trash hauler to identify insufficient services	3	899	23%
Enhanced On-land Trash Cleanups (Volunteer and/or Municipal) (QF-1)	Clean up illegal dumps, homeless encampments and expressways	NA	199	23.7%
Enhanced Street Sweeping (QF-2) – (Existing and Future Enhanced)	Increase frequency to weekly and sweeping median	NA	6,575	45.6%
Full-capture Treatment Devices (QF-5)	4 CDS units	NA	154	46.1%
Creek/Channel/Shoreline Cleanups (Volunteer and/or Municipal) (QF-6)	Participate in National River Clean up day and Coastal Clean up day and clean ups of illegal dumping/homeless encampments.	NA	199	46.8%

## 5.1 Annual Reporting and Progress Towards Trash Load Reduction Goal(s)

Consistent with MRP Provision C.10.d (i), the County of Santa Clara intends to report on progress towards MRP trash load reduction goals on an annual basis beginning with the Fiscal Year 2011-2012 Annual Report. Annual reports will include:

1. A brief summary of all enhanced trash load reduction control measures implemented to-date;
2. The dominant types of trash likely removed via these control measures;
3. Total trash loads removed (credits and quantifications) via each control measure implementation; and
4. A summary and quantification of progress towards trash load reduction goals.

Similar to other MRP provision, annual reporting formats will be consistent region-wide. Annual reports are intended to provide a summary of control measure implementation and demonstrate progress toward MRP trash reduction goals. For more detailed information on specific control measures, the County of Santa Clara will retain supporting documentation on trash load reduction control measure implementation. These records should have a level of specificity consistent with the trash load reduction tracking methods described in the *BASMAA Trash Load Reduction Tracking Method Technical Report* (BASMAA 2011e).

## 5.2 Considerations of Uncertainties

Baseline trash loading and load reduction estimates are based on the best available information at the time this Short-Term Plan was developed. As with any stormwater loading and reduction estimate, a number of assumptions were used during calculations and therefore uncertainty is inherent in the baseline trash load estimate presented in Section 2.0 and the load reduction estimate presented in this section. For these reasons, the baseline loading estimates presented in this plan should be considered first-order estimates. During the implementation of this Short-Term Plan and subsequent plans, additional information may become available to allow the calculation of a more robust baseline load.

## **6.0 IMPLEMENTATION SCHEDULE**

Implementation of enhanced trash control measures by the County of Santa Clara is currently planned to occur in a timeframe consistent with MRP requirements. A preliminary implementation schedule for all planned enhancements is described in Table 5-1. This schedule provides a timeframe for reducing trash discharged from the County of Santa Clara's MS4 by 40%.

Based on new information that becomes available during the implementation of this Short-Term Plan (e.g., revisions to baseline loading estimates or load reduction credits of quantification formulas), the County of Santa Clara may chose to amend or revise this Plan and/or the associated implementation schedule. If revisions or amendments occur, a revised Short-Term Plan and implementation schedule will be submitted to the Water Board via the County of Santa Clara's annual reporting process.

Table 6-1. Preliminary implementation schedule for enhanced trash control measures in the *County of Santa Clara*.

Trash Control Measure	Beginning Date of Implementation
Single-use Carryout Plastic Bag Ordinance (CR-1)	January 1, 2012
Public Education and Outreach Programs (CR-3)	Campaign Sept 2011 and run FY 12 through FY14, school outreach& media relations - existing
Anti-Littering and Illegal Dumping Enforcement Activities (CR-5)	Existing( planning on adopting a fine schedule by July 2012)
Improved Trash Bin/Container Management (Municipally or Privately-Controlled) (CR-6)	Existing
Single-Use Food and Beverage Ware Ordinance (CR-7)	January 1, 2012
On-land Trash Cleanups (Volunteer and/or Municipal) (QF-1)	Existing
Enhanced Street Sweeping (QF-2)	Planning for enhancement by January 1, 2013
Full-capture Treatment Devices (QF-5)	3 existing and one by July 2013
Creek/Channel/Shoreline Cleanups (Volunteer and/or Municipal) (QF-6)	Existing

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